48/50A020-060 (with *Comfort*Link™ Controls)
48/50Z030-105 (with *Comfort*Link Controls)
Controls Expansion Module (CEM) Accessory
50/60 Hz

Installation Instructions

Part Number CRCTLEXP003A00

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure).

Only trained, qualified installers and service technicians should install, start up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply. Follow all safety codes. Wear safety glasses and work gloves. Use care in handling and installing this accessory.

ELECTRIC SHOCK HAZARD.

To avoid the possibility of electrical shock, open and tag all disconnects before installing this equipment.

INTRODUCTION

The Controls Expansion Module Accessory (CEM) is required for additional features that are offered from a *Comfort*Link™ controller. The following features are supported by this accessory:

- Fan Status Switch
- Demand Limit — Redline and Load Shed
- Fire Pressurization
- Fire Evacuation
- Fire Smoke Purge
- IAQ (indoor air quality) Switch
- OAQ (outdoor air quality) Sensor
- SAT (supply air temperature) Reset
- Remote Supply Air Set Point
- Demand Limit Controller
- OA (outdoor air) Humidity (48/50Z only)
- Space Humidity (48/50Z only)
- Return Humidity (48/50Z only)
- OA Cfm Control (48/50Z only)

ACCESSORY PACKAGE CONTENTS

ITEM	QTY
Controls Expansion Module, 30GT515218	1
CEM Mounting Bracket, 30RA500083 (48/50A)	1
Snap Bushing (48/50A)	1
Harness Assembly, A1110315503 (48/50A020-035)	1
Harness Assembly, A1110315506 (48/50A040-060)	1
Harness Assembly, A1110316502 (48/50Z030-105)	1
Screws, no. 6B-20 x $^3/_4$-in.	5
Screws, no. 8-18 x $^1/_2$-in. Pan	4

INSTALLATION

48/50A Units

1. Inspect the package contents for missing or damaged parts. File a claim with shipping agency if parts are damaged. Notify your Carrier representative if any items are missing.
2. Open and tag all electrical disconnects.
3. Install CEM board onto the mounting bracket with 5 no. 6B-20 x $^3/_4$-in. screws. Add snap bushing. See Fig. 1.
4. Open Main Control Box Access Door. Remove cover around Scrolling Marquee display.
5. Loosen screws that secure Scrolling Marquee Display unit (SDU) and remove panel.
6. Disengage connections to SDU and small circuit breakers mounted on Scrolling Marquee panel.
7. Thread CEM and SDU plugs of accessory wiring harness assembly, Scrolling Marquee plug, and circuit breaker wires from the back side of the CEM mounting bracket, through the snap bushing. See Fig. 2. For 48/50A020-035 use harness assembly A1110315503. For 48/50A040-060 use harness assembly A1110315506.
8. Connect accessory wire harness plugs CEM-J1, CEM-J6 and CEM-J7 to the J1, J6 and J7 terminals of the CEM Board. See Fig. 3.

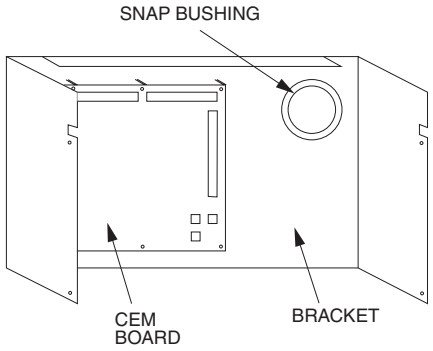

Fig. 1 — CEM Board and Mounting Bracket

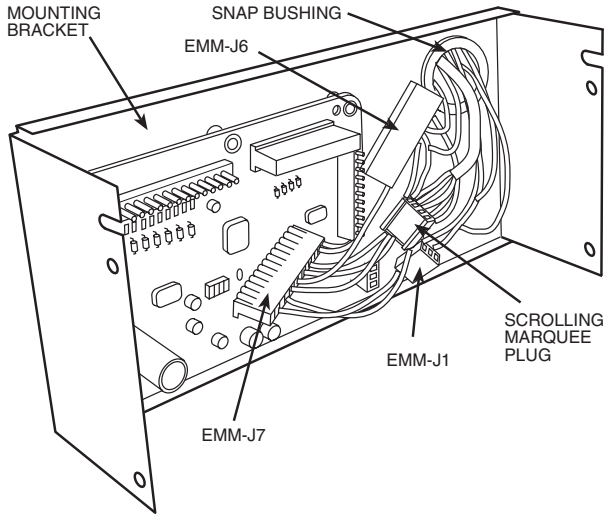

Fig. 2 — Wiring Harness and Mounting Bracket

9. Connect accessory wire harness plug MBB-J2 to the J2 terminal of the MBB Board. See Fig. 4 or 5 and Fig. 6.
10. Connect accessory wire harness plug CEM-J3 to the J3 terminal of the MBB Board. See Fig. 4 or 5.
11. Attach remaining accessory wire harness connections to the spade connectors on the back side of TB5 and TB6 according to the wire end labels. See Fig. 4 or 5.
12. Attach CEM mounting bracket inside Scrolling Marquee display mounting bracket with 4 no. 8 x $^1/_2$-in. screws. See Fig. 7.
13. Reattach Scrolling Marquee display and circuit breaker connections and replace Scrolling Marquee panel.
14. Replace control box cover.

48/50Z Units

1. Inspect the package contents for missing or damaged parts. File a claim with shipping agency if parts are damaged. Notify your Carrier representative if any items are missing.
2. Open and tag all electrical disconnects.
3. Open main control box access door. Remove control box cover.
4. Loosen screws that secure Scrolling Marquee display and remove panel.
5. Disengage connections to Scrolling Marquee display.
6. Mount CEM board using 5 no. 6B-20 x $^3/_4$-in. screws, as shown in Fig. 8 (sizes 030-050), Fig. 9 (sizes 055-070) or Fig. 10 (sizes 075-105).
7. Connect accessory wire harness plugs CEM-J1, CEM-J3, CEM-J5, CEM-J6 and CEM-J7 to the CEM board. See Fig. 3. For 48/50Z030-105 use harness assembly A1110316502.
8. Connect accessory wire harness plug MBB-J2 to the J2 terminal of the MBB Board. See Fig. 8-10.
9. Attach remaining accessory wire harness connections to PL12, PL37 and the spade connectors on the back side of TB104, TB203 and TB204 according to the wire end labels. See Fig. 8-10.
10. Reattach Scrolling Marquee display connections and replace Scrolling Marquee panel.
11. Replace control box cover.

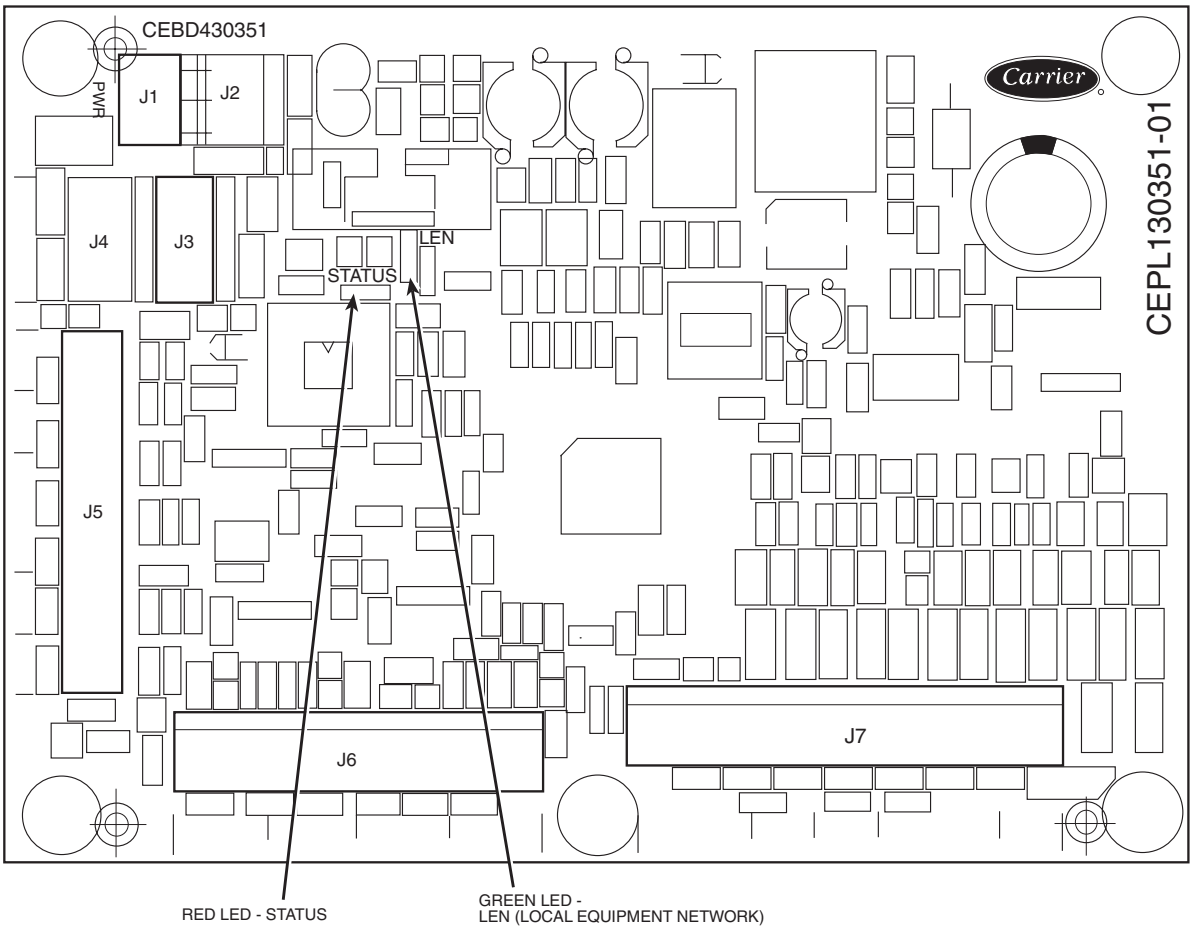

Fig. 3 — CEM Board

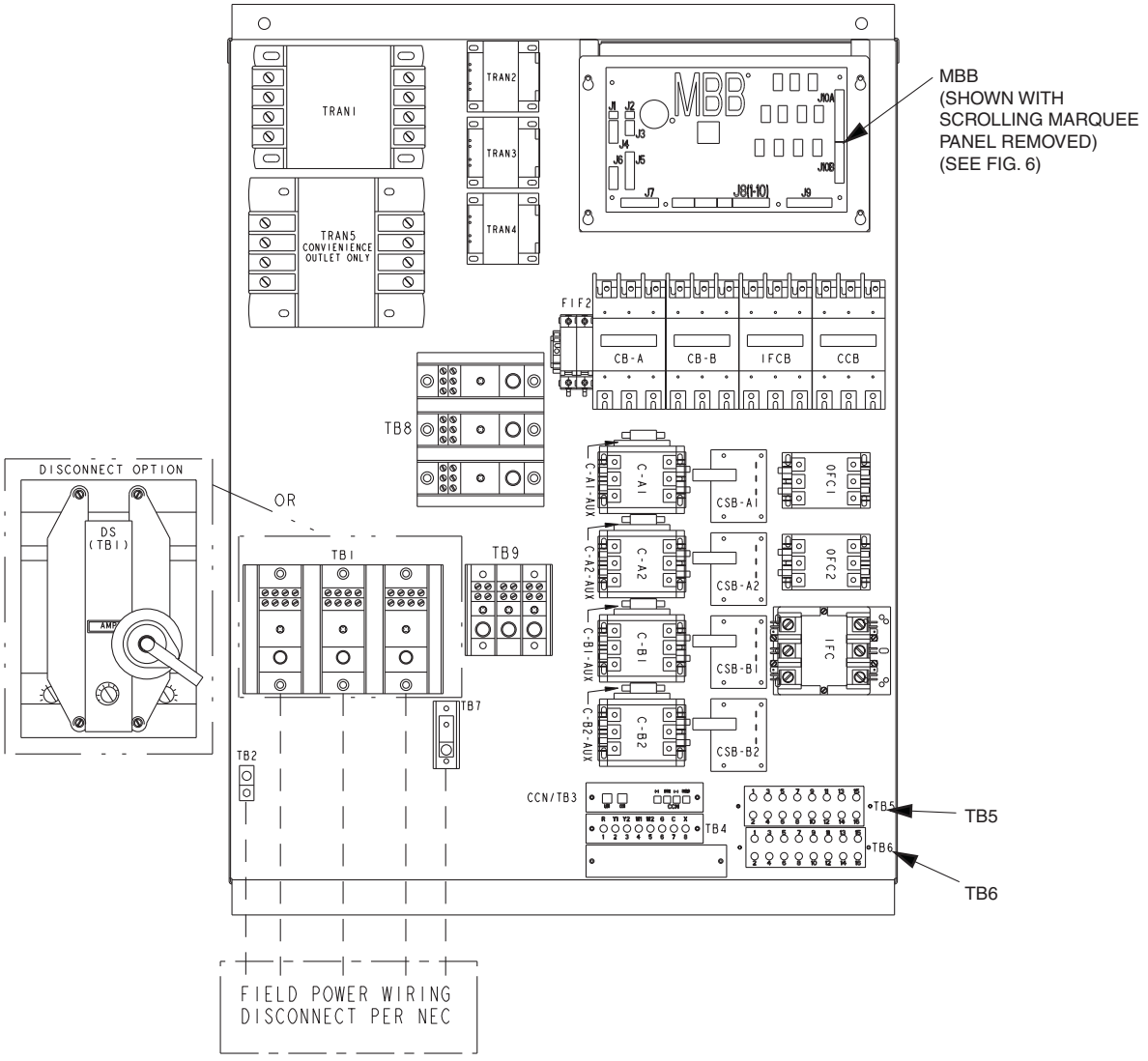

Fig. 4 — Main Control Box, 48/50AJ,AK,AW,AY020-035

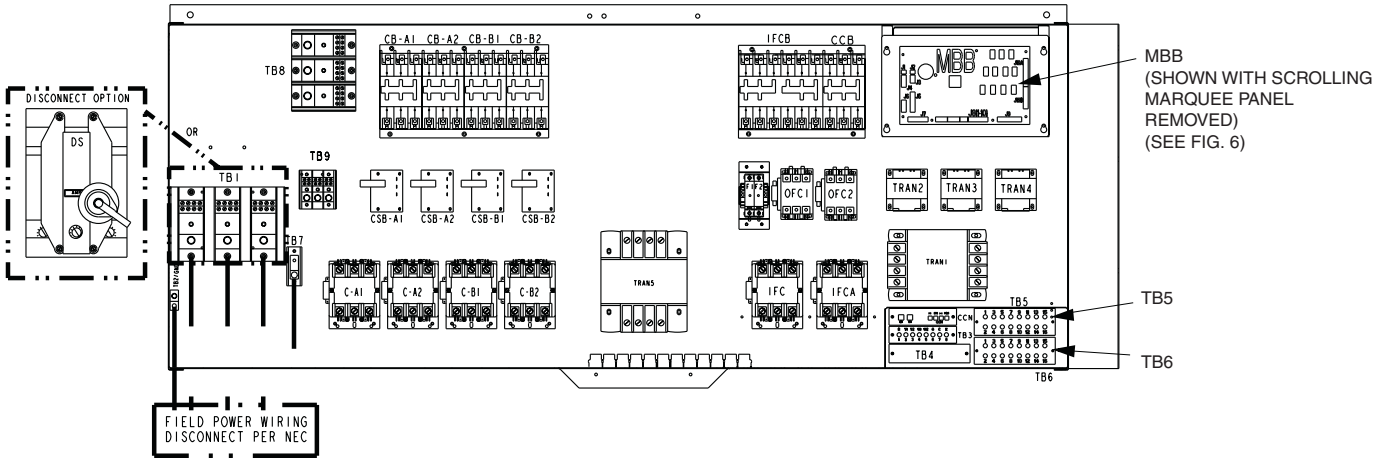

Fig. 5 — Main Control Box, 48/50AJ,AK,AW,AY040-060

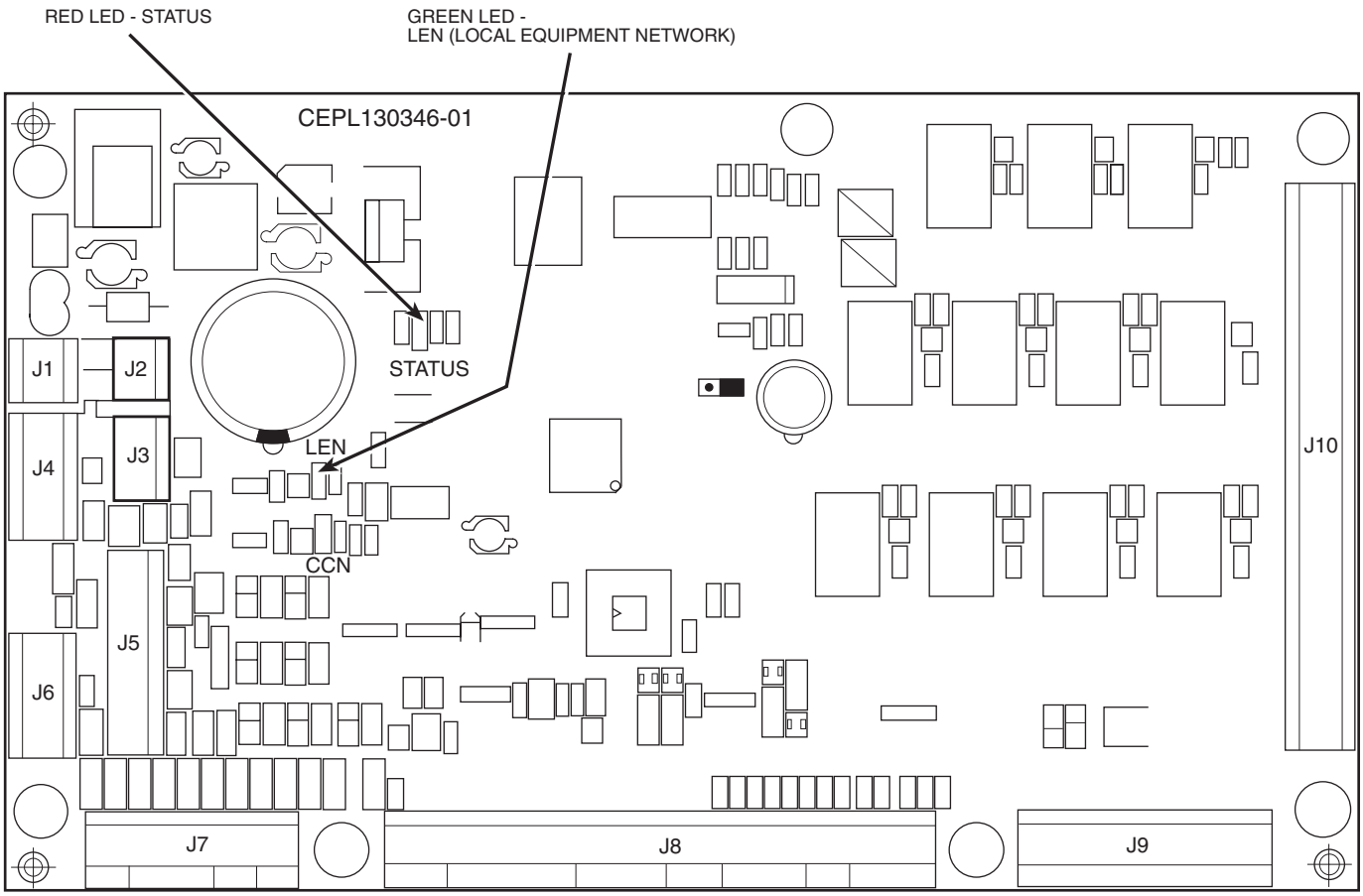

Fig. 6 — Main Base Board (MBB)

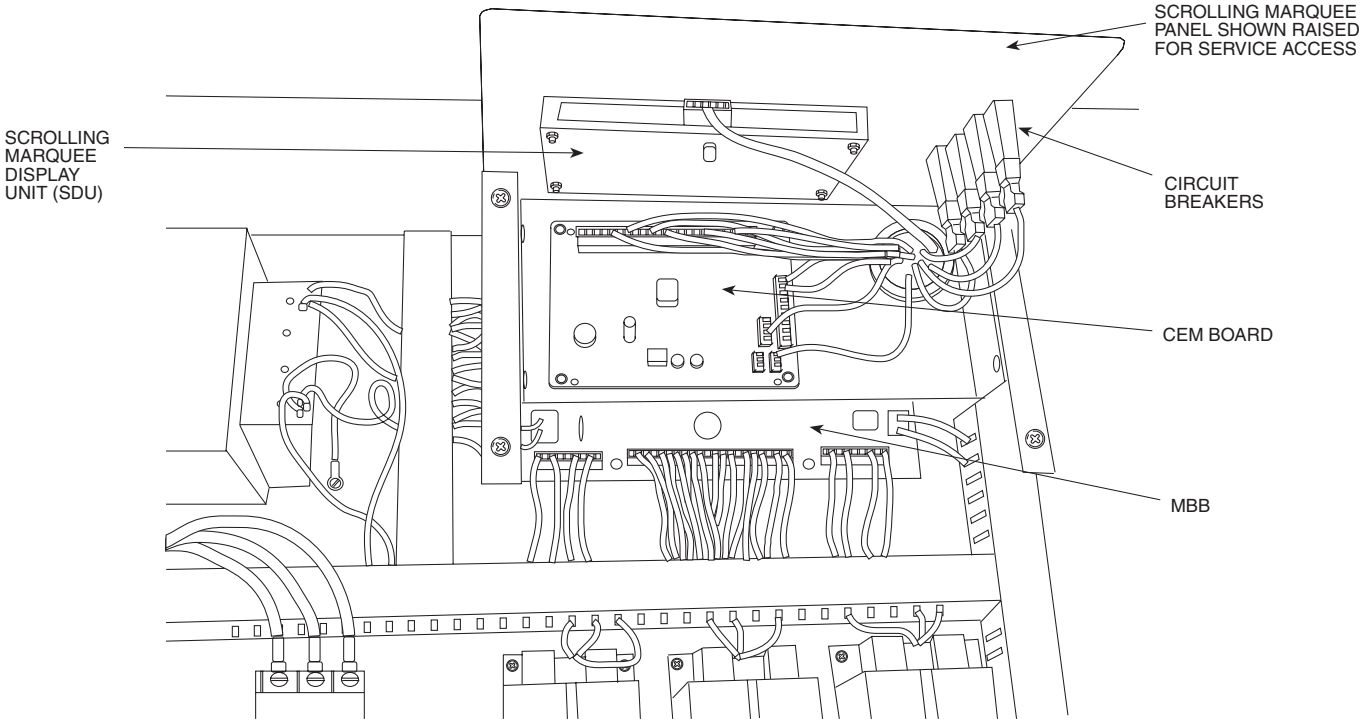

Fig. 7 — Attach CEM Bracket

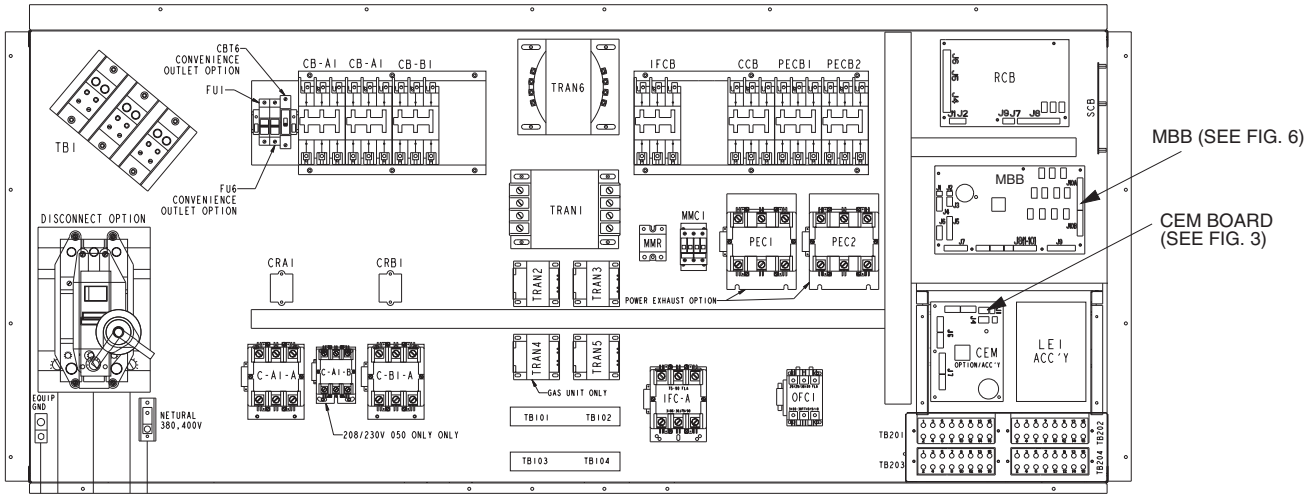

Fig. 8 — Main Control Box, 48/50Z030-050

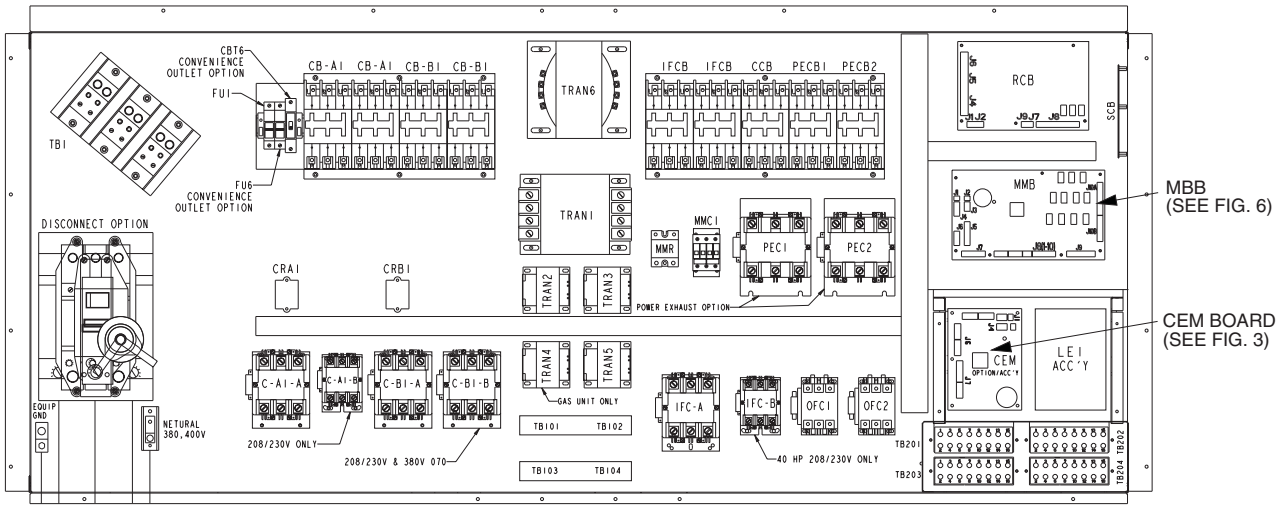

Fig. 9 — Main Control Box, 48/50Z055-070

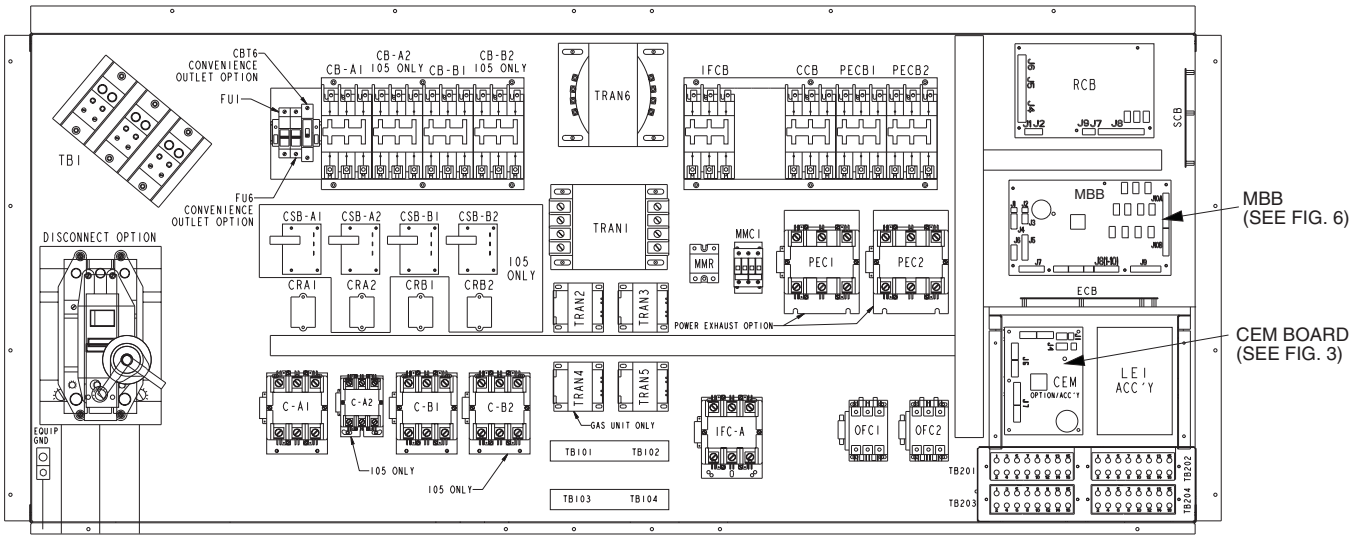

Fig. 10 — Main Control Box, 48/50Z075-105

CONTROL MODULE COMMUNICATIONS

Red LED — Proper operation of the control boards can be visually checked by looking at the red status LEDs as shown on Fig. 3 and 6. When operating correctly, the red status LEDs on all boards should blink in unison at a rate of once every 2 seconds (1 second ON, 1 second OFF). If the red LEDs on all boards are blinking, but not in unison, then either the communication wiring between boards is incorrect, one or more of the boards is faulty, or there is a software problem.

Verify that the wiring between boards is correct, and that the Main Base Board (MBB) is supplied with the current software. If necessary, reload current software. If the problem still persists, replace any board detemined to be faulty.

A red LED on any board that is lit continuously or blinking at a rate of once per second or faster (0.8 second ON, 0.2 second OFF) may indicate either a software problem or a faulty board. Reload current software. If the problem persists, replace the board.

Green LED — Each board also has a green LED, which acts as an activity light. This LED lights sporadically, whenever the board communicates with another board. On the MBB board this Local Equipment Network (LEN) LED should always be blinking whenever power is on. All other boards have a LEN LED that will blink whenever power is on and there is communication occurring. If the LEN LED is not blinking, check LEN connections for potential communication errors (J3 and J4 connectors). A 3-wire sensor bus accomplishes communication between modules. These 3 wires run in parallel from module to module.

CONFIGURE *COMFORT*LINK™ CONTROL

48/50A Units — Configure the following:
- Fan Status Switch
- Demand Limit — Redline and Load Shed
- Fire Pressurization
- Fire Evacuation
- Fire Smoke Purge
- IAQ Switch
- OAQ Sensor
- Remote Supply Air Set Point
- Demand Limit Controller

Refer to Controls and Troubleshooting Guide for configuration details.

48/50Z Units — Configure the following:
- Demand Limit — Redline and Load Shed
- Fire Pressurization
- Fire Evacuation
- Fire Smoke Purge
- IAQ Switch
- OA Cfm Control
- OAQ Sensor
- SAT Reset
- Demand Limit Controller
- OA Humidity
- Space Humidity
- Return Humidity

Refer to Controls and Troubleshooting Guide for configuration details.

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